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ABSTRACT

This article examines interpersonal cognitive problem-solving (ICPS) skills. Based on more than 20 years of research on specific ICPS skills, intervention methods were developed to test the hypothesis that behavior can be modified by focusing on thinking processes rather than the behaviors themselves. The ICPS skills relate to high-risk behaviors that may develop into serious problems such as violence and substance abuse. This approach to childrearing deals with social cognition and social adjustment. Its central theme is that certain interpersonal cognitive thinking skills play a crucial role in the social adjustment of both parent and child; thus it has particular relevance for the primary prevention of later, more serious problems. This bulletin describes intervention methods, their importance, and their impact as evaluated through research studies. Implementation and policy issues relevant to training and information dissemination are explored. A list of resources for learning more about ICPS is provided. (Contains 51 references.) (MKA)

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OJJDP
Shay Bilchik, Administrator
April 1999
JUVENILE JUSTICE BULLETIN

Preventing Violence the Problem-Solving Way

Myrna B. Shure, Ph.D.

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) is dedicated to preventing and reversing trends of increased delinquency and violence among adolescents. These trends have alarmed the public during the past decade and challenged the juvenile justice system. It is widely accepted that increases in delinquency and violence over the past decade are rooted in a number of interrelated social problems—child abuse and neglect, alcohol and drug abuse, youth conflict and aggression, and early sexual involvement—that may originate within the family structure. The focus of OJJDP's Family Strengthening Series is to provide assistance to ongoing efforts across the country to strengthen the family unit by discussing the effectiveness of family intervention programs and providing resources to families and communities.

No one doubts that parents are in a unique position to affect the behavior of their children, but the subtleties of this process are not thoroughly understood. It is known that, in the face of circumstances that appear to be very similar, some families adjust well and some do not. Even among the very poor, many of them experience seemingly insurmountable pressures of daily living, some can cope better than others and may raise children who become examples of healthy human functioning.

In recent years, there has been escalating interest in social and emotional learning in children and in the skills parents can and do use to contribute to their development. There has also been increasing interest in training for parents and their children to enhance those skills. An understanding of children's social cognition—including how they think about and perceive the feelings and viewpoints of others, how they solve interpersonal problems in different ways, and how the consequences of their actions affect them—has become a springboard from which to study why some children are socially competent and others are not.

Based on more than 20 years of research on specific interpersonal cognitive problem-solving (ICPS) skills, intervention methods were developed to test the hypothesis that behavior can be modified by focusing on the thinking processes rather than the behaviors themselves. The ICPS skills relate to high-risk behaviors that may develop into serious problems such as violence and substance abuse. This approach to childrearing deals with social cognition and social adjustment. Its central theme is that certain interpersonal cognitive thinking skills play a crucial role in the social adjustment of both parent and child. Thus, it has particular relevance for the primary prevention of later, more serious problems.

From the Administrator

It is virtually impossible to catalog the innumerable contributions that loving parents make to the healthy development of their children. Clearly, the development of skills that enable them to master the lessons of daily living and that enhance their capability to solve interpersonal problems is high on the list.

The desirability of engaging in thoughtful reflection before acting is self-evident, but the nature and quality of such thought processes are also critical. By strengthening the capacity of children to solve problems that may lead to violence or other socially undesirable behaviors, we hope to reduce their occurrence.

Fortunately, more than two decades of research have identified specific interpersonal cognitive problem-solving skills that relate to high-risk behaviors. This Bulletin describes their use by Raising a Thinking Child, a primary prevention program for children ages 4 to 7 and their parents, through its "I Can Problem Solve" curriculum.

Parents are the first teachers of every child. That is true whether the lessons learned are social, emotional, or academic. By teaching their children to think first and to think constructively, parents can contribute to preventing violence—the problem-solving way.

Shay Bilchik
Administrator

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This Bulletin describes intervention methods, their importance, and their impact as evaluated through research studies and explores implementation and policy issues relevant to training and information dissemination.

Raising a Thinking Child is a culture-free, primary prevention program for parents and their children ages 4 to 7. It is derived from a curriculum that was developed for use in schools. Originally called "Interpersonal Cognitive Problem Solving" (ICPS), the curriculum is now called "I Can Problem Solve" (also ICPS). Helping children think about ways to solve interpersonal problems when they are very young helps them grow into thinking, feeling human beings who will be able to make good decisions when they reach adolescence and adulthood.

In 1997, Raising a Thinking Child was recognized as an exemplary juvenile delinquency prevention program by the Strengthening America's Families Project, conducted by the University of Utah and funded by the Office of Juvenile Justice and Delinquency Prevention.

I Can Problem Solve for schools and Raising a Thinking Child for families both received the Lela Rowland Prevention Award from the National Mental Health Association in 1982 and were recognized as model programs by two prevention task forces of the American Psychological Association in 1986 and 1993. In 1997, they were recognized as among the six top violence prevention programs in a five-State area by the Mid-Atlantic Region of the U.S. Department of Health and Human Services.

Background and History

In the mid-1960's, a predelinquent adolescent boy ran away from a residential treatment home at 2 a.m. on a Saturday. He headed toward the city by way of the railroad tracks. George Spivack, the boy's therapist and research director of the treatment home, rescued him and asked him why he was leaving the home at 2 a.m. and walking down the train tracks. "I need to go shopping," the boy replied. Spivack asked if the boy knew that stores were closed on Sundays. "I didn't think of that," said the boy. Spivack asked if the boy knew that walking down railroad tracks was dangerous. "No. I didn't think of that," the boy repeated. Spivack asked the boy one more question. "Don't you know you'll get in trouble for going

AWOL?" Continuing with the same response, the boy replied once again, "No. I didn't think of that." Spivack, who once thought that youth who behave this way might have an unconscious, or even conscious, desire to get into trouble, began believing that his client might be telling the truth. Perhaps he really did not think. Perhaps he did not know how to think. This, and other similar experiences, led Spivack and his colleague, Murray Levine, to identify ICPS skills that would distinguish delinquent and predelinquent adolescents from their nondelinquent peers. They discovered two such skills—means-ends thinking and weighing pros and cons (Spivack and Levine, 1963).

- **Means-ends thinking** is a skill used to reach a stated interpersonal goal (e.g., making friends). With this approach, a person plans step-by-step, sequenced *means* to reach that goal (e.g., talk to a group leader and show him how to play basketball). The person then identifies potential *obstacles* that could interfere with reaching that goal (e.g., the leader does not like basketball) and appreciates that problem solving takes *time*. For example, 3 months later, a few kids see the young boy practicing shooting goals with a hockey stick and ask him to teach them how to shoot goals. The young boy makes several friends.
- **Weighing pros and cons** is a skill used to decide whether to carry out an interpersonal act (e.g., going to a party the night before an examination). A person may process the decision by thinking, "If I go to the party I'll see my friends and have fun, but I might fail my exam and get into trouble," or "If I don't go to the party I'll miss meeting the beautiful girl who just moved into the neighborhood, but I'll have more time to study and I'll get a good grade on my test."

In 1968, Spivack teamed up with Myrna Shure to continue investigating whether children who behave differently think differently. Their first study together (1972) compared youth in a school for diagnostically disturbed juveniles, ages 9 to 12, with peers in regular public schools (Shure and Spivack, 1972). Although the weighing of pros and cons did not distinguish these two groups, means-ends thinking did. In their second study, Shure and Spivack (1980) then tested this age group in a more homogeneous sample of normal public school fifth-graders who displayed varying degrees of behavioral difficulties. Youth deficient in means-ends thinking were more likely to display impulsive antisocial behaviors such as physical and verbal aggression, inability to delay gratification, overemotionality in the face of frustration, inability to make friends, and less tendency to show empathy or sympathy to others in distress than youth with competent means-ends thinking skills. These findings have been substantiated by Pelligrini (1985) and by studies of homogeneous groups in

institutional settings that compared more impulsive youth with less impulsive youth (Larcen, Spivack, and Shure, 1972) and the most-liked youth with the least-liked (Higgens and Thies, 1981). In addition, poor means-ends thinking was characteristic of youth who were more socially withdrawn, unable to stand up for their rights, and timid and fearful of others (Shure, 1980; 1985).

In addition to means-ends thinking and weighing pros and cons, two other ICPS skills emerged through the 1980 and 1985 studies.

- **Alternative solution thinking** is the ability to name unconnected, alternative solutions to a stated problem (instead of connecting sequenced plans). For example, to make friends, a child could say, "She could ask him to go to a movie with her," or "She could have a party and invite lots of kids," or "She could get another kid to tell everyone how nice she is." Well-adjusted, more socially competent children were able to think of more alternative solutions than their less well-adjusted classmates.
- **Consequential thinking** is the ability to think of different things that might happen in certain situations. For example, David was at Kevin's house, and when Kevin wasn't looking, David put Kevin's new ball in his pocket and later took it home with him. When asked to state what might happen next rather than to list pros and cons, better adjusted youth could offer more different, relevant consequences (e.g., "Kevin will make David pay for a new ball," "He'll make David apologize," or "Call his mother or the police") and more empathic responses, including, "David will feel bad 'cause Kevin thinks he lost his ball" (Shure, 1985).

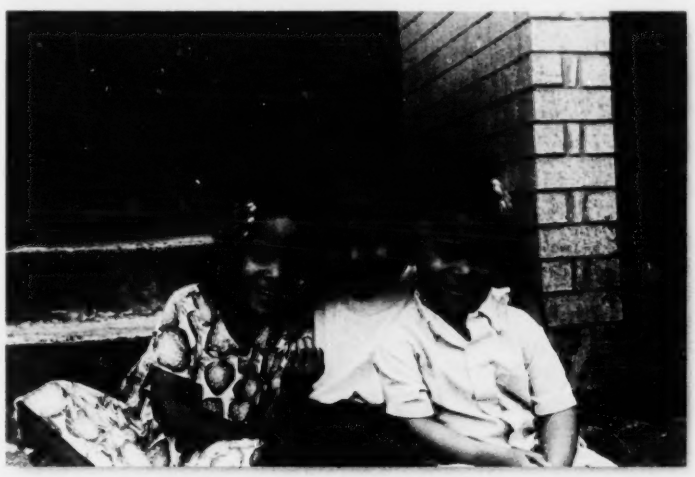
The correlational data revealed that, among this homogeneous group of low-income, African-American fifth-graders, high ICPS skills, especially alternative solution thinking skills, added significantly to the prediction of prosocial behaviors such as sharing and caring. Low ICPS skills contributed to the prediction of negative, impulsive, and inhibited behaviors. These relationships still held after the controlling effects for the Wechsler Intelligence Scale for Children-Revised Intelligence Quotient (WISC–R IQ) (vocabulary subtest) and academic skills. In addition, none of the relationships between ICPS skills and behavior were statistically explained by the number of verbal attempts to conceptualize relevant responses to these tests. Further analyses revealed that youth able to think of both alternative solutions and means-ends plans were the most prosocial and the least impulsive or inhibited of all (Shure, 1985). The significance of alternative solution thinking to behavior has also been confirmed by Asarnow and Callan (1985) in a sample of fourth to sixth grade boys (girls were not studied).

ICPS Skills in 4- to 8-Year-Olds

Interested in identifying the relationship between ICPS skills and behavior at different age levels, Shure and Spivack also studied children as young as 4 years of age. Deficiencies in two ICPS skills—alternative solution thinking and consequential thinking—were most strongly associated with impulsiveness, withdrawn behavior, and lack of prosocial skills in 4- to 8-year-olds.

Alternative Solution Thinking. As measured by the Preschool Interpersonal Problem Solving (PIPS) test (Shure and Spivack, 1992), behaviorally adjusted, low-income, African-American 4-year-olds could give more different and relevant solutions to a problem involving peers (how to get to play with a toy that another child has) and to a problem involving parents (how to keep a mother from being angry after the child had damaged property) than peers showing impulsive or withdrawn behaviors (Spivack and Shure, 1974). As measured by the Hahnemann PreSchool Behavior (HPSB) Rating Scale (Shure and Spivack, 1974), behaviorally adjusted and socially competent youngsters gave both prosocial responses to the peer-toy scenario (e.g., "Trade a toy," "Be his friend," "Say he'll just play with it a little while") and antisocial ones (e.g., "Hit him," "Grab the toy," "Take it when he's not looking"). Their more poorly adjusted peers gave fewer different solutions, though not necessarily more forceful ones. Just as they did in the peer-toy scenario, behaviorally adjusted youngsters also gave more solutions to the parent scenario (e.g., "Fix it [the flower pot]," "Hide it [throw it away]," "Hide") and more creative ones (e.g., "Pretend she's asleep and mommy can't spank her," "Put her favorite flower in it," and "Paint it her favorite color").

The study of the ICPS skills in 4- to 8-year-olds revealed surprising results. While solutions such as "Say I'm sorry" and "I made a mistake, I won't do it again" are positive, socially acceptable responses, it was shy and withdrawn children who were more likely to give those responses than children who showed either adjusted behavior or impulsive behavior. With the more adjusted children giving both forceful and prosocial solutions and withdrawn children giving apologetic ones, Shure and Spivack wondered if the important link to behavior was not *what* children think, but *how* children think. Perhaps the process of thinking of more than one solution guides behavior more than the positive content of just one or two options, however prosocial in nature they may be (Shure, Spivack, and Jaeger, 1971; Spivack and Shure, 1974). In studies replicated by other researchers in low-income 4-year-olds (Dimson, 1992; Turner and Boulter, 1981) and in the middle class (Arend, Gove, and Sroufe,



1979), lack of alternative solution thinking skills continued to relate to aberrant behaviors and the absence of prosocial behaviors in lower income and middle-income children ages 6 to 8 (Johnson, Yu, and Roopnarine, 1980; McKim et al., 1982; Richard and Dodge, 1982).

Consequential Thinking. As with older children in the ICPS study, younger children were asked what might happen next if a child grabbed a toy from another child and what would happen if a child took something from an adult without first asking. These were measured by the What Happens Next (WHNG) test (Shure and Spivack, [illegible]). Strengths in the combination of alternative solution and consequential thinking skills distinguished the adjusted children from other behavior groups. Weaknesses in both ICPS skills were characteristic of withdrawn children. This did not necessarily hold in terms of consequential thinking skills found in children identified as impulsive (Shure, Newman, and Silver, 1973). Perhaps impulsive children experience the consequences of their negative behaviors often enough to be aware of what might happen next. Perhaps withdrawn children, fearful of people and problems they cannot solve, simply give up and do not think about how to solve problems at all.

Risk and Protective Factors: The ICPS Link

Research has clearly documented that beginning as early as preschool (Parker and Asher, 1987) and escalating in the middle childhood years (Eron and Heussman, 1984; Hawkins, Catalino, and Miller, 1992; Morrison and Masten, 1991; Spivack, Marcus, and Swift, 1986), antisocial behaviors; poor impulse control, including the inability to delay gratification and to cope with frustrations; poor peer relations; and lack of empathy are high-risk predictors of subsequent delinquency, substance abuse, teen pregnancy, school dropout, and some forms of psychopathology. Early social withdrawal predicts more internalized problems such as depression (Rubin and Mills, 1988).

In addition to these risk factors, Arend, Gove, and Sroufe (1979) and Schiller (1978) also found that, in middle-income 4-year-olds, alternative solution thinking skills related to protective factors such as resilience. These researchers learned that those who gave a high number of solutions on the PIPS test were more likely to behave flexibly, persistently, and resourcefully, especially in problem situations, than low scorers. Perhaps having more than one solution available provides the very flexibility and resourcefulness that creates a resilient child.

Zachary, a 4-year-old who wanted the wagon Peter was playing with, illustrates how cognitive flexibility can relate to behavioral flexibility. When Peter refused his request, Zachary asked him why he couldn't have it. "I need it," replied Peter. "I'm pulling the rocks." Instead of hitting Peter, grabbing the toy, telling the teacher, or walking away in despair, Zachary said, "I can help you pull the rocks. We can pull the rocks together." Peter said, "Okay," and the two children went off, happy with their solution. No adult had to intervene. The children solved the problem themselves. Children who can think of several options can, perhaps, avoid experiencing frustration and failure. They can bounce back and do not have to give up too soon.

Having identified the link between ICPS and behavior, Shure and Spivack tested the hypothesis that ICPS skills mediate behaviors and that behaviors can be modified by engaging children in thinking about their actions, the impact of that behavior on themselves and others, the possible consequences of their actions, and the other options they have. If exposing children to an intervention that focuses on thinking skills, rather than directly on behaviors themselves, could reduce or prevent high-risk behaviors, there would be a new approach to the primary prevention of violence, substance abuse, mental health dysfunction, and other subsequent, serious outcomes.

Early School Intervention

Believing that it would be optimal to reduce and prevent high-risk behaviors at the earliest possible age, and with research showing that inner-city, low-income youth may be at greater risk than their middle-income peers, Shure and Spivack began their interventions with urban, primarily African-American children in federally funded daycare programs.

Training strategies grew out of what was learned from correlational studies, from what children were observed saying and doing, and from the theory that understanding a child's social cognition could explain why some children are socially competent and others are not. Because the Shure and Spivack research suggested that the process of thinking, not the content, helps children apply their problem-solving skills to many situations, no single solution was stressed. Rather, the focus was to help children develop the habit of thinking of *different* ways, not adult-valued ways, to satisfy their needs and cope with frustration. They could then decide for themselves whether their idea was or was not good in light of their own and others' feelings and of the possible consequences. The goal was to enhance ICPS skills very early in life and increase the probability of preventing later, more serious problems.

Preschool and kindergarten teachers were trained to implement ICPS skills in their classrooms through games, role-plays, and dialogs applied to real life (Shure, 1992a; 1992b). The study showed that the 113 children exposed to the interventions in preschool improved their problem-solving abilities more than a comparable group of 106 children who were tested but not trained. The study also showed that trained youth who improved their ICPS skills were most likely to show a decrease in both impulsive and withdrawal behaviors. These gains were still apparent when they were measured 1 and 2 years later. In addition, preschoolers who did not exhibit behavioral difficulties were less likely to begin exhibiting them in kindergarten if they were exposed to ICPS training. This was a very important finding because it suggested that no matter how skilled a child was at solving problems, he or she could still improve, and that the continued use of ICPS skills to solve real problems helped to relieve any anxiety, frustration, or anger.

The 35 children trained in kindergarten also improved their ICPS skills and behaviors compared with a control group of 27 children who were never trained, suggesting that although kindergarten is not too late to expose children to ICPS, those who were given ICPS training in nursery school could enjoy their kindergarten year from a better behavioral vantage point (Shure and Spivack, 1979a; 1980; 1982).[1]

Parent Research

Given the positive results of the ICPS studies, Shure and Spivack adapted the program to the home. To investigate the impact that a mother's means-ends skills have on her child's ICPS skills, the researchers administered a battery of tests

[1] ICPS has also been conducted in grades 5 and 6 (Shure, 1992c), with research results reported in Shure and Healey (1993).

measuring problem-solving skills and styles of handling problems that arise at home to 40 low-income African-American mothers of 4-year-olds. The tests that yielded the most interesting results involved child-related stories and child-rearing style.

- **Means-Ends Thinking: Child-Related Stories.** Each mother was given the beginning and ending of a story depicting hypothetical problems between a mother and child, or between two children, and asked to explain what can happen in between to produce the outcome. For example, in one story, a child is depicted as unhappy and unmotivated to go out and socialize with his or her friends. The test scored the number of *means* to the stated goal (e.g., "Get him a toy and he'll want to go out and show it to the kids"), the number of *obstacles* (e.g., "But she can't afford a new toy right now" or "He's afraid the kids would break it"), and the number of statements of *time* the mother could produce (e.g., "For 3 days we talked about it, and he finally went out and talked with the kids").
- **Childrearing Style.** Each mother was given six general categories of typical problems that arise in the home, such as a child wanting something he can't have or refusing a request. The mother was asked to relate, as best as she could, everything she said or did in that situation and everything her child said or did (or what might happen if the problem occurred). While no claim was made that mothers always reported exact details of what took place (although that was the stated intent), their reports were still an indication of their ability to think about handling problems that came up.

Test Results

The testing showed that a mother's means-ends skills regarding hypothetical child-related problems have a direct impact on her childrearing style, with high means-ends scorers being more likely to offer positive suggestions in real life and/or explanations of the impact of an act on another. Low means-ends scorers are more likely to handle real problems with negative punishment, threats, demands, and commands (Shure and Spivack, 1978). A mother's child-related means-ends problem-solving ability and her childrearing style were correlated with her child's ICPS skills. Curiously, in two studies, this occurred only if the child was a girl (Shure and Spivack, 1978). While one might conjecture that boys, no more deficient in their ICPS ability than girls, learn ICPS skills from their fathers, more than 75 percent of this sample came from homes in which the father was absent. Flaherty (1978) found that, among 30 low-income intact families, the same correlation existed between mothers and their 5-year-old daughters but not between fathers and either their daughters or sons, a finding replicated in the middle class by Howie (1977). Although the way boys acquire their ICPS skills has still not been identified, the question became whether mothers could learn to be effective training agents for their children and whether systematic ICPS intervention at home could equally affect the thinking skills and behavioral adjustment of boys and girls (for further discussion of the natural parental impact on a child's ICPS skills, see Shure and Spivack, 1978).

Raising a Thinking Child: The Parent Interventions

After an initial pilot study of 10 low-income African-American mothers and their 4-year-old children showed that training mothers to teach problem-solving skills to their children at home produced behavior gains at school (Shure and Spivack, 1978), a more systematic study examined how, and if, change in mothers' ICPS skills and childrearing style would affect their children's ICPS skills and/or behavior (Shure and Spivack, 1978).

Before training, many mothers were just as preoccupied with their own needs for their children ("You must learn to share your toys") as their children were with theirs ("But I did share, now I want it back!"). Therefore, the goals for mothers were to (1) increase their awareness that the child's point of view might differ from their own; (2) help them recognize that there is more than one way to solve a problem; (3) increase their understanding that *thinking* about what is happening may, in the long run, be more beneficial than immediate action to stop the behavior; and (4) help them provide their children with a model of problem-solving thinking—that is, a thinking parent might inspire a child to think.

Session Content

Each week, for 10 weeks, parents were given text from a manual and pictures and puppets with which to play specific ICPS games with their children. Parents were also instructed on how to use the weekly concepts in problem and nonproblem situations. The sequence of sessions was as follows.

Weeks 1–3: A Problem-Solving Vocabulary. In this unit, the family was introduced to ICPS words, a set of carefully chosen vocabulary words that set the stage for problem-solving thinking. By associating learning with fun, children learned selected word pairs in a game format that demonstrated problem-solving thinking. For example, the words *is* and *not* were taught so children could think about whether their idea for solving a problem "*is* or is *not* a good one." The word pair *before/after* was taught to help children think about what happened *before* a fight began. For example, "Did he hit me *before* or *after* I hit him?" The word pairs *same/different* and *why/because* help children think about new solutions

to problematic situations, such as obtaining a toy from another child. For example, "Hitting and kicking are kind of the *same* because they can both hurt someone. I can think of something *different* to do that will not hurt someone."

Weeks 4–6: Emotional Awareness/ Preference Recognition. Once the children learned to identify people's feelings, they learned to become sensitive to them. The goal of this unit was to build on the ICPS words to teach children that there is more than one way to decipher how someone feels, namely by listening, by watching, and by asking. In addition to learning these *different* ways to find out about people, children learned that *different* people can feel *different* ways about the *same* issue (e.g., a messy room, climbing on the furniture). They learned that sensitivity to the preferences of others is also important in deciding what to do in situations (e.g., "I like dolls but he does *not*"). This kind of perspective taking helps children think about what would make a friend happy and what would not. Using previously learned concepts, children learned that, if one way of making someone happy is not successful, it is possible to try a *different* way.

Weeks 7–10: Problem-Solving Thinking Skills. In this unit, the children played games that required them to use skills learned in the first 6 weeks to think of *alternative solutions* to hypothetical problems. They also learned to use other ICPS words such as *might* and *maybe* to answer the question, "What *might* happen if? (e.g., 'What *might* happen if someone pushes someone down to get them out of their way?')"

Exercises for Parents. At appropriate points in the training, the parents were given exercises to help them:

- Think about their own feelings and become sensitive to their children's feelings.
- Find out how their child viewed the problem.
- Engage the child in the process of solving the problem through ICPS dialoging (see below).

Program Structure

After the first meeting, usually an overview of the program and exposure to the first week's lessons, each group meeting began with the parents describing their successes and failures during the previous week. For the first hour, this discussion and the lessons for the week were enacted through demonstration and role-play, with parents practicing the lessons with each other. The second hour was devoted to steps toward ICPS dialoging when real problems come up at home. This led to full dialogs, which included:

- "What happened, what's the problem?"
- "How do you think he feels when . . . ?" (e.g., "When you hit him?")
- "What happened next?"
- "How did that make you feel?"
- "Can you think of a *different* way to solve the problem?"

The parents were also taught how to shorten the dialog after they and their children had become familiar with the approach. Eventually, the parents could just ask, "Can you think of a *different* way to tell him [me] how you feel?" or, "Can you think of a *different* place to leave your toys?" In the final half hour of the meeting, the parents were invited to bring up problems that had come up but had not been discussed. With leader supervision, they then discussed ways to use the ICPS dialoging techniques. In the group meetings, the parents developed a sense of community. Some called each other between meetings to find out how they were doing with a particular lesson or to ask for help with problems that came about.

Results

Relative to matched controls, mothers who went through the training significantly improved both in ability to solve hypothetical child-related problems and in childrearing style. The following story shows how a trained mother created a means-ends story about hypothetical siblings who were fighting. In the exercise, the mother was instructed to finish the story in a way that would have her children end up happy. This would solve the problem; merely ending the fighting would not.

> *Trained mother:* First she tells them she is sorry they are so upset (*means*). She asks one of them to tell her what happened (*means*). The older boy said his younger brother lost his racing car. So she asked, "Why don't you make a game of it and look for it together" (*means*). The younger brother says he doesn't want to look for the racing car (*obstacle*). The older brother waits for the younger brother to be in a better mood (*time*) and suggests that "whoever finds it first wins a prize." The mother agreed to go along with this (*means*), and both of the boys looked for the racing car. Finally, the younger boy found the racing car. The mother didn't want another fight over the prize, so she gave a treat to both of the boys, letting the younger one have first choice (*means*). That was fair. The mother asked them if they were happy now, and they both said yes.

The subject mother recognized an obstacle that could potentially interfere with reaching the goal but did not portray the story mother as insisting that the boys stop the fighting and look for the car immediately. Depicting her older son as waiting for his younger brother to be in a better mood—thereby conceptualizing both time (the ability to wait) and timing (exercising good judgment)—the story mother allowed the children to think the situation through and accepted the solutions the children chose. What is being tested in this example is the extent to which the trained mother included the components of means-ends thinking in her story. This mother included all three components—means, obstacles, and time. Because it is a story the trained mother is making up, it does not matter which character in the story performs the actions. What is important is that the trained mother understands the concepts of means-ends thinking and recognizes how they can be used in communicating with children. Mothers who best learned to plan step-by-step means to solve a problem involving a hypothetical child, who were most likely to anticipate potential obstacles, and who allowed the child to generate solutions and consequences were also more likely to apply the ICPS dialoging techniques in real life, as measured by their childrearing style.

In contrast to the pretest findings of the mother's problem-solving skills being related only to their daughters, both boys and girls improved in ICPS skills and behavior. Before training, mothers with the highest scores for childrearing style offered suggestions and explained consequences, but very few elicited the child's view of the problem or possible solutions.

The finding that children who showed behavioral difficulties could improve by learning ICPS skills and mastering their use was particularly encouraging (Shure and Spivack, 1979b). Another encouraging finding was that inner-city mothers, many

of whom were initially ICPS-deficient, could become effective training agents in only 3 months. That children trained in one setting (home) could improve their behavior in another setting (school) is believed to be a result of teaching the children *how* and not *what* to think. Having been guided to solve their own problems, rather than given solutions each time a conflict or need occurred, the children learned skills that enabled them to generalize when new problems confronted them. As rated by teachers blind to the training process, impulsive children learned more effective ways to obtain their wish when it was obtainable and to cope with the frustration when it was not, and withdrawn children no longer had to deny their desires and withdraw from interpersonal confrontation.

Five-Year Longitudinal Study

A study of children from kindergarten through fourth grade (Shure, 1993), funded by the National Institute of Mental Health, was the culmination of 20 years of research to test the ICPS/behavioral mediation hypothesis. Children were trained by their kindergarten teachers, some were retrained by their first-grade teachers, and some were retrained by their mothers. All were compared with children who were only trained in kindergarten or never trained at all.

In addition to studying the longer range impact of ICPS training, Shure made clearer distinctions to define how parents and teachers talk to, or with, children when real problems occur (Shure, 1997b). She delineated four levels of communication to distinguish ICPS dialoging (asking techniques) from negative punishment and from even more positive suggestions or giving explanations (telling techniques).

- **Level 1: Power assertion (demands, belittles, punishes).**
  - Do it because I say so!
  - Do you want a spanking?
  - How many times have I told you . . . !
  - If you can't share the truck, I'll take it away and neither of you can have it.
- **Level 2: Positive alternative (no explanation).**
  - I'm on the phone now, go watch TV.
  - Ask him for the truck.
  - You should share your toys.
- **Level 3: Induction (explanations and reasons).**
  - I feel angry when you interrupt me.
  - If you hit, you'll lose a friend (hurt him).
  - You'll make him angry if you hit him (grab toys).
  - You shouldn't hit (grab). It's not nice.
- **Level 4: Problem-solving process, ICPS dialoging.**
  - What's the problem? What's the matter?
  - How do you think I (she/he) feel(s) when you hit (grab)?
  - What happened (might happen) when you did (do) that?
  - Can you think of a *different* way to solve this problem (tell him/her/me how you feel)?
  - Do you think that *is* or is *not* a good idea? Why (why not)?

In 1972, in the fall of their kindergarten year (the beginning of the study), 542 low-income African-American public school children (264 boys, 278 girls) were studied, of whom 120 boys and 132 girls were still available at the end of fourth grade (Shure, 1993). Of these, 46 were trained by their mothers (27 boys and 19 girls in first grade, following teacher training in kindergarten). By fourth grade, 27 of the 46 mother-trained children were still available for study, a percentage typical for low-income African-American youth. The remainder could no longer be located in the school system, which suggested that they had moved out of the city or enrolled in private schools. The results presented below are all statistically significant.

- Among the 200 boys and 180 girls still remaining at the end of the first grade (first training assessment), children who were trained by their kindergarten teachers, children who were trained by their kindergarten and first grade teachers, and children who were trained by their kindergarten teachers and by their mothers in first grade were, compared with controls, significantly ahead in ICPS skills, especially alternative solution skills. They also had significantly lower mean scores on negative behaviors, as rated by independent observers on the Direct Observation Form (Achenbach and Edelbrock, 1983) and significantly higher mean scores on rated positive behaviors. This was especially true for those who were trained for 2 years by their teachers.
- In the second grade, 162 boys and 162 girls still remained. Alternative solution thinking, superior in all three trained groups at the end of the first grade, remained so at the end of the second grade, with the 2-year teacher-trained group maintaining their superiority in both sexes. The mother-trained children were the least impulsive, the least withdrawn, and showed the fewest behavior problems as observed by independent raters. The same was true for the boys trained by teachers for 1 or 2 years.
- After some slippage in behavior in the third grade, the 120 boys and 132 girls still available for the study in the fourth grade showed superior alternative solution thinking skills in all trained groups, with 2-year teacher-trained children emerging as the best adjusted group of all. Among parent-trained children, those whose mothers

ICPS Dialoging

Below is how one ICPS-trained mother used level 4 ICPS dialoging with her 4-year-old son who hit his friend.

Mother: What happened? What's the problem? (eliciting child's view of the problem).

Child: He hit me first.

Mother: What happened *before* he hit you? (using ICPS vocabulary word "before" is less threatening than an accusatory question such as "*Why* did you hit him?").

Child: I took his toy.

Mother: What happened when you hit him?

Child: He hit me back.

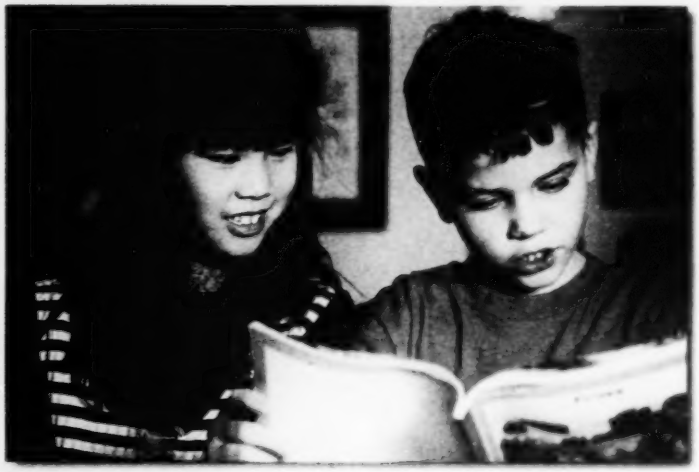
Mother: How do you think he feels when you take his toys and hit him? (guiding the child to think of other's feelings).

Child: Mad.

Mother: And how did *you* feel when he hit you? (guiding child to think of *his* feelings too).

Child: Mad.

Mother: You're mad and he's mad. Can you think of a *different* way to solve this problem?



best applied problem-solving dialoging (measured 3 years earlier) were still maintaining their significant behavior gains at the end of the fourth grade, when the study was completed.

After a while, ICPS dialogs can be shortened. One mother watching her two sons, ages 5 and 3, playing tug-of-war over a truck simply asked, "Can you two think of a *different* way to solve this problem?" The 5-year-old told his brother that he could have the truck for a little while, but when it was his turn, he'd have to give it back. Before ICPS training, this mother would have taken the toy away and told her sons, "If you two can't share, I'll put it away," leaving both children angry and frustrated instead of proud of their own solution.

Replication

Replication of the positive behavioral impact of ICPS and ICPS-inspired school-based interventions are described in detail in Spivack and Shure (1982), Denham and Almeida (1987), and, more recently, in Shure (1997a; 1997b). There have also been successful replications of outcome measures of ICPS training with parents as well. Staff from the Mental Health Association in Illinois, who conducted 7 weeks of training with parents of culturally diverse backgrounds, found that children learned to express their feelings, think of alternative solutions to problems, and identify possible consequences. Although behavior was not measured, parents reported a change in their own parenting style (use of ICPS dialoging) and new insights into their children's thinking (Caravello, 1992). Qualitative analyses of middle- to upper-income parents yielded the same reported improvements as those measured by systematic rating scales in children (Baumgardner, 1996), suggesting that the generic approach of ICPS is not limited to use with any one specific ethnic or income group.

Training Parents of Children With Attention Deficit Hyperactivity Disorder

With single subject design, Aberson (1996) taught ICPS to parents of three second grade children with attention deficit hyperactivity disorder (ADHD). Measured by teacher and parent ratings on the Behavior Assessment System for Children (BASC) Rating Scale (Reynolds and Kamphaus, 1992) and self-reports, the scores of all three children improved from pre- to post-training on measured depression (e.g., feeling sad, sudden mood changes) and, as rated by their parents, the children had decreased their conduct problems and increased their ability to relate well to others. These parent-trained children also improved in conduct grades on their report cards as rated by their teachers and in their interpersonal relationships. These behavioral improvements remained at 6-month followup assessment. It is notable that, as in the 1978 Shure/Spivack study of nondiagnosed children, these ADHD children generalized their behavior from the setting in which they were trained (the home) to another setting (the school). While hyperactivity and the ability to focus may have to be controlled with medication, Aberson's data suggest that problem-solving skills and behavior can be improved through the use of ICPS strategies. While more research is needed, it is important to recognize that trained ADHD children can learn how to handle anger, find alternative ways to express their anger, and recognize consequences of their behavior, all of which address risk factors that, combined with poor behavior and no training, could contribute to an overall pattern of failure in school and to later delinquency and/or other serious outcomes.

Anecdotal Data

Aberson reports that one of the ADHD children (a lower middle-income girl) would not do her homework, resulting in a constant power struggle in which the mother (a single parent) lost her temper and the child failed at school. After ICPS training, the mother reported listening more to her child, asking the child how she thinks the mother feels when they have to argue and how this problem could be solved. Now the child talks to her mother and does her homework. When Aberson asked, "What are you thinking when you are doing your homework and getting it done?" the child gleefully exclaimed, "I want to get my work done so my mom and teacher will feel *proud* of me" (a feeling word that is used in the program). This child's grades improved and, as measured by her self-report, so too did her sense of control over her world (locus of control) and self-esteem.

Another child (a middle-income Cuban boy) was initially very dependent on his mother. He would not get dressed in the morning, had to be given his toothbrush, and so on, which resulted in fighting between his parents (the father resented the mother "babying" him). One day during training, the boy asked his mother for an allowance. His mother asked him what he could do to get an allowance and the boy answered, "I can pick up the leaves around the pool and water the plants." The next day he woke up his parents, dressed and ready for school. When his mom asked (very surprised), "Why are you up so early?," her son said, "I want to get my job done before I go to school so I can play with my friend after school." This kind of planning ahead had never occurred before.

Guide to Implementation

There are several possible ways to implement Raising a Thinking Child. Now in workbook form for children ages 3 to 7 (Shure, 1996b), the program provides a

set of interactive exercises with pictures children can color, circle, or draw lines through and exercises for parents to help them move to the problem-solving stage of the process.

One training model is for a parent educator to meet with a small group of parents for a period of 6 weeks (after which most will ask for more time). The first meeting consists of parents talking about what is important to them and what they want for their children. The trainer also talks about ICPS dialoging: how it will be a change from the way they are used to talking with their children and how they will ease into it slowly, one step at a time. Each week the trainer assigns homework from the workbook (at least 3 days' worth for the parent to conduct with the child and at least one parent exercise). At each meeting, parents "show and tell" the pictures their children decorated, followed by discussions on how they handled problems they encountered on the four levels of communication described above. As the meetings progress, parents role-play, practice using ICPS vocabulary words in different situations, and talk about their own feelings in various situations, their children's feelings, and ways to guide their children to think of solutions and consequences to problems.

A second model presents parents with Raising a Thinking Child in book form (Shure, 1996a), a format that includes games and exercises but is less interactive than the workbook. Aberson merely encourages the parents she trains to read the book on their own (in that they are all competent readers) and focuses upon dialoging in the group meetings.

Another model, implemented by Sandra Baumgardner at the DuPage County Health Department in Illinois, includes the children in the meetings. In the first hour, one trainer works with the parents, another with the children in a separate room. In the second hour, the children join their parents and show them what they have learned. Some demonstrations of new games from the book or the workbook include the children from the beginning.

Workshops for parent educators can also vary from a half day to 2 days, depending on funding. It is always preferable for followup training to occur, not only to fine tune the trainers' knowledge and abilities, but to support them in their work.

Policy Implications

To the extent that parents who teach ICPS skills to their children can help them prepare for school and help them learn, ICPS intervention can also be included as part of the Parent Involvement initiative that is now a focus of schools nationwide. Goal 1 of the National Education Goals 2000 includes the objective "Every parent in the United States will be a child's first teacher and devote time each day to helping such parent's preschool child learn, and parents will have access to the training and support parents need." Goal 8 from the same report states, "By the year 2000, every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children" (National Education Goals Panel, 1997), which is especially relevant for ICPS.

Although ICPS was not designed to directly improve school achievement, both parent-trained and teacher-trained children, as early as the first grade, did better on standardized achievement tests and/or grade-book levels in reading and math. Perhaps some children who are failing at school do not need more emphasis placed on academic subjects, but would be better able to focus on those subjects if they were relieved of any emotional blockage that might be interfering with their ability to concentrate. It is logical to conclude that, regardless of IQ (never found to explain the ICPS/behavior linkages), once behaviors mediated through ICPS skills do improve, children can better absorb the task-oriented demands of the classroom and subsequently do better in school.

To the extent that poor school achievement is a high-risk predictor of dropping out of school, delinquency, substance abuse, and other serious outcomes and that ICPS reduces and prevents those early high-risk behaviors, the I Can Problem Solve and Raising a Thinking Child interventions can support National Education Goal 7, that "By the year 2000, every school in the United States will be free of drugs, violence, and the unauthorized presence of firearms and alcohol and will offer a disciplined environment conducive to learning" (National Education Goals Panel, 1997).

If children can learn to think about the problems that are important to them early in life, they will be better equipped to handle the more serious issues of drug use, violent behavior, unsafe sex, and other problems that will confront them in middle school, junior high school, high school, and beyond.

For Further Information

For more information about training on the Raising a Thinking Child and I Can Problem Solve programs for your school or agency, contact Myrna B. Shure, Ph.D., MCP Hahnemann University, Broad and Vine, MS 626, Philadelphia, PA 19102; 215–762–7205 (phone), 215–762–8625 (fax); shurem@wpo.mcphu.edu (e-mail).

For more information on the Raising a Thinking Child program for families, consult the following publications by Dr. Shure:

Raising a Thinking Child. Help Your Young Child to Resolve Everyday Conflicts and Get Along With Others, New York, NY: Pocketbooks, 1996. 800–456–6798. (Also available in bookstores.)

Raising a Thinking Child Workbook. New York, NY: Henry Holt, 1996. Organizations (bulk orders): 212–674–5151, ext. 573; individuals and schools: 888–330–8477. (Training manual for parents and parent educators.)

Raising a Thinking Child, New York, NY: BDD Audio Publications, 1996. (Available from the author.)

For more information on the I Can Problem Solve program for schools, consult the following publications by Dr. Shure (all are available from Research Press in Champaign, IL, 800–519–2707):

I Can Problem Solve (ICPS): An Interpersonal Cognitive Problem Solving Program [preschool], 1992.

I Can Problem Solve (ICPS): An Interpersonal Cognitive Problem Solving Program [kindergarten/primary grades], 1992.

I Can Problem Solve (ICPS): An Interpersonal Cognitive Problem Solving Program [intermediate elementary grades], 1992. (Training manuals for teachers and school personnel.)

The following additional resources are also available:

D. Goleman, *Emotional Intelligence*, New York, NY: Bantam Books, 1995. 800–323–9872.

How To Raise and Teach a Thinking Child, Plantation, FL: Specialty Press, 1998. 800–233–9273. (Video.)

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